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PSYCHOLOGY AND SCIENTIFIC METHODS

ARISTOTLE AND THE PRACTICAL SYLLOGISM

IT is gratifying to observe that the attention drawn by Professor Dewey to the existence of a "practical" judgment-form, in which judgments about the future, about things to-be-done and about values tend to be expressed, has revived philosophic interest in the somewhat mysterious Aristotelian doctrine of the Practical Syllogism. Some, indeed, with that reverence for antiquity which distinguishes philosophy and theology, do not hesitate to claim that "the Father of Logic" had the prescience also to foresee its most modern heresies;¹ while in the past opinions have differed widely as to what the doctrine of the Practical Syllogism meant or proved.² It may not be amiss, therefore, to investigate it afresh and in the light of the new developments of logic, in order to determine if possible what this doctrine really was, what its logical significance and psychological value are, how far Aristotle's doctrine has a real bearing on modern problems, and finally whether it has anticipated Professor Dewey.

I

The most obtrusive, if not also the most instructive, appearance of the Practical Syllogism is undoubtedly in what Mr. Robinson calls "the famous discussion in the *Nicomachean Ethics*" (Book VII., Ch. 3, §§ 9-14), where it is used to explain the nature of "incontinence" (*ἀκρασία*). This passage is an *application* of the doctrine to a difficult moral problem which has resisted solution by intellectualist ethics ever since the days when Socrates attempted to reduce virtue to knowledge and vice to ignorance. Its primary importance is as an analysis of incontinence, and it can not, perhaps, be expected to give a full and satisfying account of the Practical Syllogism, though it may serve to raise the problems which this notion in-

¹ Like Mr. D. S. Robinson in this JOURNAL, Vol. XIV., p. 225, and the writer in *Mind*, No. 89, p. 1.

² *E. g.*, W. H. Fairbrother, in *Mind*, N. S., No. 23; D. G. Ritchie, in *Mind*, N. S., No. 24, and the commentaries on the *Ethics* of Grant, J. A. Stewart and Burnet.

volves. At any rate it does not do so and is hardly deserving of a laudation like Mr. Robinson's³ when he declares that "here Aristotle shows very clearly what the application of logic to action is, but he was too good a logician to fall into the trap either of making practicability a unique logical character or of setting practical syllogisms into a figure to themselves. For he was well aware of the fact that logically speaking they are just like other syllogisms." Mr. Fairbrother is more moderate in his appreciation, but agrees that "this form of argument differs in no respect *formally* from any other syllogism, but has for its *matter* something which is not of merely abstract or scientific interest, but which affects us practically as living and sentient creatures."⁴ As a matter of fact the Practical Syllogism, as stated in the *Nic. Eth.*, VII., 3, is neither intelligible in itself nor admirable in its performance, and a critical consideration of this passage alone could only entail its utter condemnation.

It may be objected to this account, (1) that it does not state the complete form of the Practical Syllogism and indeed does not even state any practical syllogism completely. For the complete form we have to go to the *De Anima*, III., Ch. 11, while in the *Ethics* the logical relations of the practical syllogisms indicated remain obscure.

(2) These "syllogisms" are three in number. One of these, which may be called "the syllogism of continence," is left quite vague; we are only told that its major premiss "forbids us to taste," but whether "all sweets," or only "to excess" is not stated. The other two are both "syllogisms of incontinence," and when completed would run, *all sweets should be tasted, this is sweet, ∴ this should be tasted*, and *all sweets are pleasant, this is sweet, ∴ this is pleasant*. It is not made clear whether these two syllogisms are equivalent or whether the second is in some sense an advance on the first, as Professor Burnet declares.

(3) If so, it seems unfortunate that it should drop the specific "practical" form, and no longer express any reference to an act to-be-done. In itself *all sweets are pleasant* appears to be as purely intellectual as any other statement of scientific fact; if it functions as the major premiss of a "practical syllogism," it is only from the particular context that its meaning can be seen to be really practical. In this respect it is like some of Professor Dewey's examples,⁵ though unlike Professor Dewey the Aristotelian writer gives us no warning to this effect.

(4) The real trouble begins when we are told (§ 10) that there is no "essential" opposition between the major premiss of continence

³ This JOURNAL, *loc. cit.*, p. 226.

⁴ *Loc. cit.*, p. 365.

⁵ *Essays in Experimental Logic*, pp. 335-36.

and of incontinence, and that their conflict only arises "accidentally," under the circumstances of a particular case when desire impels a man to act. For though it is doubtless true that *all sweets are pleasant* is not as such incompatible with *shun excess* and only becomes so in a particular case, yet it is *not* true that either of the alternative forms of the syllogism of continence is compatible with the *original* version of the syllogism of incontinence. *Shun sweets* and *shun excess* are *both* contrary to *all sweets are to be tasted*. Consequently the second version alone can claim to stand as the Aristotelian explanation of incontinence. Now in this version the "practical" form has disappeared, and as an explanation of real ἀκρασία, i. e., fully conscious wrongdoing, it fails lamentably. For since the desire for bad pleasure, which is expressed in the minor premiss *this is sweet*, mobilizes a major premiss, consonant with it, in *all sweets are pleasant*, while there is no motive to construct a syllogism that would conclude to continence, the good principles that might serve as major premisses remain impotent and are not applied to the case. Hence the incontinent man, *in the moment of action*, is *not* aware that his act is wrong—that he remembers it *later* is not relevant. Being possessed by desire, which has constructed for itself an intellectual justification, he thinks what is wrong right. Now this is the *differentia* of the moral condition called by Aristotle ἀκολασία, "profligacy," and all that in the end the theoretical analysis of incontinence accomplishes is to describe it as a *temporary* lapse into profligacy. The ἀκρατής becomes ἀκόλαστος *pro tem.*, the ἀκόλαστος is the ἀκρατής grown chronic. This no doubt brings out the relation of both conditions to the growth of habits, but it is no explanation of conscious wrongdoing.

(5) It is singularly unfortunate that the Aristotelian writer makes no attempt to account for the action of the "continent" man. To have done so might not only have enabled us to see where precisely the difference lay between the man who yields to temptation and the man who overcomes it, but also have thrown light on the construction of "practical" syllogisms. As it is, it is only implied that there is a syllogism of continence and that it determines the action of the continent man. It would presumably run, *Excess is to be shunned* or *Sweets are to be shunned*, *This is excess* (or *sweet*), ∴ *this is to be shunned*: but how is it to be arrived at?

(6) The difficulty of answering this question consistently with the analysis given of "incontinence" is the apparent reason for this *lacuna*. The writer has committed himself to the position that the motive to action is to be found in the minor premiss alone, which (in the case of the incontinent) is dictated by desire. The universal major premisses are purely intellectual entities which lie inactive in

the mind until they are called up by some form of appetition (*ὄρεξις*). As Book VI., Chapter 2, § 5, declares, "pure intellection moves nothing," and a relation to an end of action has to supervene. If, therefore, it had been made clear in Book VII., Chapter 3, that a *good* minor premiss could mobilize a good major and construct a syllogism leading to continent abstention, what would have become of the writer's explanation of incontinence? For the question would have become irresistible—Why can not the *ἀκρατής* do what the *ἐγκρατής* does, and construct a syllogism of continence? And why can not both the desire for the bad pleasure and the desire (whatever it is) that prompts to continence be present together in the mind, and fight out a real moral struggle, which, according as it issues in one way or the other, results in continence or in incontinence?

(7) One final obscurity about the application of the Practical Syllogism to moral action must be noted, because it pervades the whole account. Is the analysis of action as a "practical syllogism" intended as a description of a process which *actually goes on* in the agent's mind, or is it merely a way of *reflectively representing* the actual process in intellectual terms? Do the incontinent actually think and construct practical syllogisms, or merely *act as if* they had constructed them? Is the Practical Syllogism a psychic fact or a logical analysis? Is the writer talking psychology or logic?

The answer is difficult because just this vagueness about the relation of logic to psychology has been characteristic of the traditional logic throughout its whole career. And it is, of course, no answer to say, with D. G. Ritchie, "What is now given is a psychological analysis of the mental state of the *ἀκρατής*, but with the help of the logical analysis of the syllogism."⁶ No doubt at first sight one is strongly tempted to read Book VII., Chapter 3, psychologically (*ψυχικῶς*) as a description of an actual psychic process: indeed, unless it is so taken, it becomes irrelevant to its professed problem, the psychology of incontinence. But the language (especially *ὑπὸ λόγου πως καὶ δόξης ἀκρατεύεσθαι*) is vague enough to admit of the logical interpretation, and there are other much more explicit statements of the Practical Syllogism that have to be considered.

II

It is important to grasp at the outset that the idea of a "practical syllogism" did not arise for Aristotle in a logical context at all. It is clear from the *De Motu Animalium*, Chapter 6, that what suggested it was the problem of explaining the purposive motions of animals and men, and the way in which their acts appeared to be

⁶ *Loc. cit.*, p. 539.

controlled by ends to which they were means, and from which they seemed to follow, even as the conclusion of a syllogism follows from its premisses (*ibid.*, Chapter 7, *init.*). The "syllogism," therefore, is the perception of an *analogy* between the "movement" of thought, as reflectively analyzed by the logician, and the bodily movement of purposive action; and like the "theoretic" syllogism, it is *not* "psychology," but a product of philosophic reflection.

As a *psychologist* Aristotle endeavors to enumerate the psychic processes, from which motion might follow, as αἴσθησις (sense-perception), φαντασία (imagination, representation), δianoia (intellection), προαίρεσις (purpose), βούλησις (wish), θυμός (temper) and ἐπιθυμία (desire). Of these the first three are intellectual and derivable from νοῦς (intuitive reason); the last three are grouped under ὄρεξις (appetition), while "purpose" is compounded out of νοῦς and ὄρεξις. The object purposed is the practical end or good, including the seeming good, and so "contingent"; hence the intellection and the reason involved are practical. Aristotle tries to maintain throughout his dualism of the theoretic and the practical reason, and the superiority of the former in virtue of the superior dignity of its "necessary" objects.

Accordingly in Chapter 8 (702 a 18) the chain of stimulations preceding organic motion is described as commotions (πάθη) of the organs, excited by appetition, evoked by representation arising from sense-perception or thought (νόησις). The last is mentioned because human agents manifestly do things in consequence of their awareness of theoretic objects; hence conceptions (ἐννοιαί) are possible stimuli to motion. But it is never really explained how it is that conceptions have the same power to move as appetition, any more than how intellection and appetition are united in "purpose"; Aristotle contents himself with a reference to his doctrine of an "unmoved mover."

He gives, however, abundant illustrations of "practical syllogisms" in Chapter 7, from which we may quote. "Whereas there" [in reasoning about the immutable objects of "science"] "the end is a theoretic proposition (for when one has thought the two premisses one has also thought and composed the conclusion), here the conclusion arising from the two premisses is an action; *e. g.*, when a man has thought that every man should walk and that he is a man, he straightway walks. . . . 'I need a covering, a cloak is a covering, I need a cloak. What I need must be made, I need a cloak; a cloak must be made.' And the conclusion, the cloak must be made, is an act. Nay he acts from the first. If there is to be a cloak, there must be the first step. And if one thing, then the other; and this too he does at once. So then it is clear that the act

is the conclusion." It is then pointed out that, as in theoretical inquiries, an obvious premiss need not be dwelt on, and that action is accelerated by the absence of reflection, "for when a man functions in view of his aim, either by way of sense-perception, or of imagination, or of reason, he at once does what he desires. For the activity of appetite takes the place of inquiry or thought. 'I must drink,' says appetite, 'this is drink,' says perception or imagination or reason: at once he drinks."

In the *De Anima*, Book III., Chapters 9-11, we find substantially the same doctrine as in *De Motu*, though in an obscure and difficult form. In Chapter 9 it is very explicitly denied that intellection (*διάνοια*, *νοῦς*) can be a cause of motion and this is illustrated by the case of "incontinence," where action is determined by appetite. Yet the continent, though they feel appetite, do not act on it, but follow reason. Hence (Chapter 10) *νοῦς* must be a principle of motion after all. Only it is *practical* reason, and purposive reasoning, and different in its end from theoretic. Ultimately this dualism of appetite and practical reason is overcome by the object of appetite (*ὀρεκτόν*) which stirs both—though no reason is given why it should excite the latter. It is the good aimed at, and is itself unmoved. So is the "scientific" major premiss (*ἐπιστημονικόν*)—we must add, presumably, "in a sense"; for the incitement to motion lies in the minor, as in *Eth. Nic.*, VII., 3. The form of the Practical Syllogism is, however, stated more fully here than in the *Ethics*, as "such a one should do such a thing, this is such a thing, and I am such a one, ∴ I should do this." This, as the commentators note, facilitates self-sophistication, since a failure to perceive *either* clause of the minor premiss puts the syllogism of *ἐγκράτεια* out of action; but it explains neither how real *ἀκρασία* is possible, nor how the *ἐγκρατής* overcomes his temptations, nor how the good principle can move to action at all, if it is "unmoved" and appetite alone moves to action.

III

The above catena of excerpts should make clear a number of matters which the allusions in the *Ethics*, Book VII., left obscure.

(1) The doctrine of the Practical Syllogism means, not that a practical syllogism *leads to* action, or that actions presuppose syllogistic reasoning, but that actions *are* the conclusions of "practical syllogisms."

(2) This applies to all acts alike, reflective or impulsive, good, bad, or indifferent.

(3) Hence the doctrine does not in the least explain how a man either resists temptation or succumbs to it.

(4) The writer of *Ethics*, Book VII., Chapter 3, whose identity with Aristotle has often been doubted, had no warrant for substituting in § 10 the "theoretic" form of reasoning for the "practical" form in § 9.

(5) It is pretty clear that the form is logical analysis rather than psychological description, and, an *ex post facto* interpretation of the psychic process, though a *penumbra* of ambiguity lingers about a few passages.

(6) Not one of these Aristotelian passages is really concerned with any of the logical questions now raised by Professor Dewey and myself. They do not discuss either (a) whether there is a specific judgment-form for assertions about acts-to-be-done, or (b) whether "practical" judgments have a special subject-matter, or (c) whether in *all* judgments irrespective of their verbal form logic should not recognize an implicit reference to action.

As to (a) it may be pointed out that there is no question in Aristotle of a practical form alongside of the theoretic, competing with it for logical recognition, and itself reacting on the notion of "logic." Any act may be conceived as a conclusion of a syllogism, and no importance is ascribed to the reference to a "to-be" in the form.

As to (b), it is true that acts, and, therefore, "practical syllogisms," are about special objects, *viz.*, the "contingent matter" of the sublunary world, but it is the difference in the objects that conditions the difference in the judgments, and not *vice versa*; moreover, the distinction is taken over from metaphysics, and does not in any way coincide with Professor Dewey's. "Theoretic" judgments (in Dewey's sense) about sublunary objects would be to Aristotle just as "contingent" as "practical." If, accordingly, we give up the precise Aristotelian doctrine about "necessary" objects in the sky, as the moderns all do, it follows that the judgments of our mundane science are all "practical."

As to (c) it is obvious that the doctrine stops short in a dualism aggravated and apparently insoluble, which leaves it unintelligible how intellect and appetite can ever cooperate, whereas the contention that there is a reference to action latent in all thought is precisely an attempt to overcome this intolerable dualism.

IV

Still we have not done with Aristotle. There are still some passages which may help us out. Thus, *Eth. Nic.*, VI., Chapter 2, declares that "there are three things in the soul which determine action and truth, perception, reason, and appetite. Of these perception is not the principle of any action" (in the narrower sense) "as

is clear from the fact that animals have perception but have no share in moral action. *Now what is in intellection affirmation and denial, that same thing is in appetite pursuit and avoidance:* so, since moral virtue is a purposive habit and purpose is appetite after deliberation, it is necessary on this account both that the reasoning should be *true* and the appetite *right*, if the purpose is to be *good*, and that they should severally affirm and pursue the same things. The intellection and the truth concerned are, however, *practical*: the intellection which is theoretic and neither practical nor productive *has for its 'good' and 'bad' the-true-and-false*—truth and falsity being the proper function of *all* intellectual faculty—whereas for *practical* intellection it is truth-consonant-with-right-appetition."

What is here expounded is evidently a thoroughgoing *parallelism* of intellection and appetite. This must not be equated with Hegel's intellectualistic attempt to describe conflict as "negation." For it is not intended to reduce appetite to intellection, but leads on to an incipient recognition of truth and falsity as essentially *values*. If we permit ourselves to develop these hints a little, we shall find that they go far to remove the difficulties we have noted.

(1) It is clear that if intellection and appetite run parallel, the former in no wise explains the latter. What this parallelism means is that the same fact, *viz.*, psychic life, may be conceived in terms *either* of pursuit and avoidance, *or* of affirmation and denial.

(2) Hence the Practical Syllogism is not an *explanation* of action, but only a *translation* of action into terms of intellection. It is merely to speak the language of logic instead of that of psychology. The claim which has been injudiciously made for it, that it reveals the logic of action and the dependence of action upon thought, vanishes of itself. "Thought" and "appetite" are co-equal and interdependent, because they are alternative dialects for describing the same fact, now from a standpoint of logic, now from one of psychology, and any onesidedness in reducing action to thought should at once be atoned for by a complementary emphasis on the volitional aspect of all thought as the satisfaction of a desire and of a will to know.

(3) Nevertheless we can now see how the dualism even of this parallelism may be overcome. "That which is affirmation and denial" is also "pursuit and avoidance"—what then is the unity that lends itself to this dual description? Clearly it is that which is *common* alike to "theory" and to "practise," and to the "good-and-bad" of both. Now this is precisely the implicit reference to a *good-and-bad*. The good-and-bad of "theory" is, we are told, the *true-and-false*. It is precisely because the true is the "good" aimed at by all intellection, and the false is the "bad" to be avoided, that

intellect and appetite have any common ground, even to fight on, and can *both* be relevant to action. The mystery of how reason, as well as appetite, can "move" is solved when truth is regarded as a "good" to-be-sought, and error as an "evil" to-be-avoided.

(4) We thus arrive, by a purely Aristotelian *route*, at the humanist contention that "truth" and "falsity" are fundamentally *values*. "Value" is the supreme "category," which ultimately includes all psychic process, whether "practical" or "theoretic," whether a "logical" content or a "psychological." It is merely an incidental consequence of this conclusion that the very form of the "Practical Syllogism" attests this fact, by describing truth as a something to-be-sought, while it is an easy corollary that all judgments which claim "truth" are, in a very real and important sense, "practical."

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TWO COMMON FALLACIES IN THE LOGIC OF RELIGION

THERE are two fallacies that are met with so frequently in the literature of the philosophy of religion that they deserve explicit mention. The first, arising from a confusion between the value and the truth of religious beliefs, is so characteristic of the pragmatic way of thinking in the field of religion, that it may properly be labeled the pragmatic fallacy. The second fallacy arises from the attribution of the so-called religious experience to outside, "higher" forces in cases where, in reality, the cause of the experience is merely physiological—from "below" and not from "above." This may be called the fallacy of false attribution.

I

When value and truth are distinguished, and when it is seen that in many cases beliefs that are clearly false still have obvious value for those who hold them as true, then the argument so commonly used that, since certain religious beliefs possess value for the believers, they are therefore true, is seen to be unsound. Truth is definable in terms of consistency among beliefs or propositions, or of correspondence with facts. Pragmatists accept this when they say, as James does, that beliefs "work," and are true, only if they *agree with* reality; and they take the "working" of a belief as evidence that the belief does agree with reality. Truth is something that belongs to the subject-matter of logic, while value has a field of its own. Value is the subject-matter of the special science of value, and